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**For your Pod - report**

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| 1 | **TITLE** |  |
|  | Integrating Podcasting(the procedural paradigm) in a programming course @ DUT’s IT department:  An analysis by Prinavin Govender. |  |
| 2 | **CONTEXT** |  |
|  | Which current international and/or local trends are triggers for your investigation?  “Innovative educators, from instructional leaders working in state capitals to classroom practitioners responsible for a single set of students, are exploring how iPod can serve as a powerful educational tool in teachers’ and students’ efforts to achieve 21st century literacy.” (Pasnik, 2007)  So when the opportunity was presented I felt this dire need to be an innovative educator and dabble in the technology of “IPOD” and podcasting.According to the following international literary articles (Pasnik 2007,Deal 2007) (Moore, 2005) (Alexander, 2006) (Blythe,2006) and to narrow the field to UKZN “The School of IS&T brings to the collaboration its expertise in cutting edge course delivery technologies such as podcasting and virtual classrooms. A joint effort by the School of IS&T, the Department of Telemedicine and the UKZN Innovation has seen the installation of the first fully fledged podcast producer solution in South Africa based on Apple technologies.”    It appears that DUT and more especially the IT department trails behind international and even local trends w.r.t podcasting. This is my trigger for an investigation at DUT’s IT department.  When initially asked the question: “why would one be interested in podcasting”; I provided the following response; and I include it in its entirety :  Response extracted and quoted as per my initial motivation to learn podcasting:  “  Well, I love to fiddle around with technology to make my teaching (not lecturing) easier.  I love to use the adage – “work smart not hard”, and I discovered that technology helps me to work smarter and not necessarily harder.  With that in mind I have employed the concepts of “e-learning” and used webct as a teaching tool.  I was one of the early pioneers-my highlight was “upload and play a video in my webct classroom”. (That was many many years ago). Today to upload a video is a norm and a few mouse clicks away.    WebPages and web classrooms, I’ve “built and demolished”, some are still in the archives of hard drives.    Email and sms messages I’ve used as a teaching tool, I have about 100 students on my email distribution list, and I email them on a daily basis, more often than not it’s not according to “office hours”, again this is not “ground breaking” use of technology. Even experimented the “blue-tooth” technology, it created a buzz in my classroom. (P.s there was literally a buzzing from cell phones).    In my classroom, u surf the internet and u keep your cell phone on.    My latest craze is Facebooking with my students - an idea sparked by the initial email of "IPODing."    Then along came the email about “IPODding”, (doing “your thing” with an IPOD- reference Prinavin) and it got me energized again – DUT is once again experimenting with “cutting edge technology”, and I wanted to join the party,  yes I wonder if IPODing can be used for  dancing to a lecturer’s tune – I know we can easily upload and download Mpeg files;    What more secrets does the world of “IPODing” have to reveal.  Will I be a part of the new technology of teaching at DUT?  End quote |  |
| 3 | **CHALLENGES** |  |
|  | Which challenges and/or opportunities exist in your own teaching environment which you could possibly address through podcasting?  The following challenges exist in my teaching environment:  Students have varying degrees of computer/IT competence that range from totally non-existent, to “software developers” at first year level.  The IT department lack basic hardware and software infrastructure to deploy podcasts and RSS feeds. We lack basic internet access and Wi-Fi access for our IT students.  My students have varying economic backgrounds. Most of my students were unable to download my podcast because they did not have personal mp3 players or cell phones that could access and download the podcast.  An opportunity that did exist was the fact that many of my students travelled long distances via public transport (taxi or lift clubs) and they felt that listening to a podcast would be educationally beneficial and enhance the journey to and from the university. Students did state that an interesting podcast would make their journey more tolerable and less tiresome. In summary there exists a dire need from students to embrace “innovative” teaching methods. |  |
| 4 | **PROBLEM STATEMENT** |  |
|  | Phrase a problem in the form of a question.  In this report, we explore a possible relationship between learner’s beliefs pertaining to their own education of computer programming, their attitudes towards podcasting and their willingness to embrace podcasting as a tool to assist in their learning. |  |
| 5 | **THEORY** |  |
|  | Which educational theories seem most relevant to your investigation?  Briefly describe each theory's key characteristics.  (Some examples are connectivism; constructivism, harnessing technology to enhance learning; mobile learning in higher education; the millenlial student, etc)  Behaviorism, cognitivism, and constructivism are the three broad learning theories most often utilized in the creation of instructional environments.  Constructivism suggests that learners create knowledge as they attempt to understand their experiences (Driscoll, 2000, p. 376). Behaviorism and cognitivism view knowledge as external to the learner and the learning process as the act of internalizing knowledge. Constructivism assumes that learners are not empty vessels to be filled with knowledge. Instead, learners are actively attempting to create meaning. Learners often select and pursue their own learning. Constructivist principles acknowledge that real-life learning is messy and complex. Classrooms which emulate the “fuzziness” of this learning will be more effective in preparing learners for life-long learning.  **Connectivism** is a learning theory used in computer science which is based on the premise that knowledge exists in the world rather than simply in the head of an individual has been dubbed "a learning theory for the digital age", because of how it has been used to explain the effect technology has had on how people live, how they communicate, and how they learn.   * Learning may reside in non-human appliances.   Connectivism is the integration of principles explored by chaos, network, and complexity and self-organization  theories. Learning is a process that occurs within nebulous environments of shifting core elements – not entirely under  the control of the individual. Learning (defined as actionable knowledge) can reside outside of ourselves (within an  organization or a database), is focused on connecting specialized information sets, and the connections that enable us  to learn more are more important than our current state of knowing.  Connectivism is driven by the understanding that decisions are based on rapidly altering foundations. New information  is continually being acquired. The ability to draw distinctions between important and unimportant information is vital.  **Constructivism** is a theory of knowledge (epistemology) that argues that humans generate knowledge and meaning from an interaction between their experiences and their ideas. Constructivism suggests that learners create knowledge as they attempt to understand their experiences (Driscoll,2000, p. 376)  Connectivism seems most relevant to my research |  |
| 6 | **METHODOLOGY** |  |
|  | What is action research?  “Action research is a reflective process of progressive problem solving led by individuals working with others in teams or as part of a "community of practice" to improve the way they address issues and solve problems. Action research can also be undertaken by larger organizations or institutions, assisted or guided by professional researchers, with the aim of improving their strategies, practices, and knowledge of the environments within which they practice.”  How have you used the methodology's structure for your investigation?  Questionnaires will be used to determine learner’s perceptions of their competence in podcasting. The responses will be analyzed using a statistical package (SPSS) explain the diffusion of podcasting amongst learners. Some possible learning strategy suggestions will be included.  The Questionnaire:   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | NO | statement | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | | 1 | Podcasting does not scare/intimidate me at all. | 1 | 2 | 3 | 4 | 5 | | 2 | Sometimes podcasting makes me feel uncomfortable | 1 | 2 | 3 | 4 | 5 | | 3 | I am glad that I have been exposed to my lecturer’s podcasts. | 1 | 2 | 3 | 4 | 5 | | 4 | Usually listening to a podcast enhances my understanding of lecture material. | 1 | 2 | 3 | 4 | 5 | | 5 | I sometimes feel that podcasting would be easier with more access to “podcasting technology” | 1 | 2 | 3 | 4 | 5 | | 6 | I usually download my podcasts with minimum effort. | 1 | 2 | 3 | 4 | 5 | | 7 | I feel that learning about podcasting is a waste of time. | 1 | 2 | 3 | 4 | 5 | | 8 | Sometimes podcasting using “blended learning” is a more effective learning activity. | 1 | 2 | 3 | 4 | 5 | | 9 | “Vodcasts” is a more effective than Podcasts to enhance teaching and learning. | 1 | 2 | 3 | 4 | 5 | | 10 | The “podcasting paradigm” ought to be limited to distance/correspondence learning | 1 | 2 | 3 | 4 | 5 |   Comments  (to be completed by respondents) |  |
| 7 | **DESIGN** |  |
| 7.1 | **The vision**  What is the vision for your use of podcasting in your course in the long term?  What will it aim to achieve, how will you share your podcasts with your students, and what reaction do you anticipate from your students?  I envision lecturers presenting lectures and lectures simultaneously being recorded and streamed live to other students on campus via microwave/WI-FI technology and RSS feeds. This will aim to achieve a greater target audience of students and ensure that students always have access to academic lecture material.  I shared my podcasts via my Facebook website and the youtube website. i.e [www.facebook.com](http://www.facebook.com) and [www.youtube.com](http://www.youtube.com)  Overall the reaction has been positive, many students enjoyed just listening to my voice,  Negative traits :the cost factor(podcast files tend to be larger than text files; vodcast files were extremely much larger than podcast files)   * slow download speeds; * including “buffering of podcasts” ;this irritated some students |  |
| 7.2 | **Podcasting in Higher Education at DUT**  How will the podcasting encourage interaction/ collaboration/ engagement/ participation/ active learning?  My students enjoyed listening to the pronunciation of programming concepts; the comment was: “I wish my other lecturers used podcasts”. Students could also listen to the podcasts at their leisure. Students collaborated with each other to download and share the podcast amongst themselves i.e. One would download the podcast via their internet connection and another would then share it via Bluetooth or email it to other students.  Some felt that the podcast created a “passive listener”; however, this notion was dispelled by some students who felt that they would benefit by listening to a podcast (i.e. mp3 file) on their cell phone than listening to music. |  |
| 7.3 | **Working smart**  How will you use podcasting to make your life easier?  TO coin a phrase: “I speak once my students listen many”.  Students would download a podcast and listen to my lecture notes/critical aspects of programming or simply watch a particular event in a programming environment interface. They can view the vodcast or listen to the podcast at their leisure and at their pace. |  |
| 7.4 | **Student Attendance**  How do you think podcasting will affect student attendance?  Students may choose to “bunk” lectures and catch up via downloading and listening to a podcast.  How will you design your podcasts to enable students to get the best from face to face meetings and learning via electronic media?  Podcasts must complement traditional lectures; use the concepts of blended learning. Assessments must be face-t-face meetings. The podcast MUST not simply be a recording of a “presented lecture” |  |
| 7.5 | **Feasibility**  What infrastructure and resources (a) are, and (b) ought to be in place in your learners' environment in order for this project to be successful?  Students must have access to the internet; preferably WI-FI  Students must have an mp3 player or a cell phone to accept and play mp3/4 formats. |  |
| 8 | **IMPLEMENTATION** |  |
| 8.1 | **Pilot activity**  Describe the pilot activity you have tried out with two or three volunteer students/participants (or your colleagues!)  My pilot study included my students from the system software1 class. Students were invited to join my facebook profile, to download the podcast, listen to the podcast and they were questioned. Some students opted to reply on the facebook commentary page. Furthermore, I did email fellow colleagues a questionnaire to complete. For this activity the podcast was posted to the website: [www.youtube.com](http://www.youtube.com) ; colleagues were asked to download the podcast and to answer the questionnaire.  Refer to section 6 : the questionnaire |  |
| 8.2 | **Relevance**  How does this activity aim to address the challenges and opportunities you have identified?  The activity of uploading the podcast to the youtube and facebook websites addressed the challenges associated with limited storage space. |  |
| 8.3 | **Feedback**  What feedback did you receive from volunteer students/participants? Provide a basic analysis.  Professor Graham Stuart states and I quote:  “I agree that podcasts are very useful for helping students consolidate their learning. Podcasts like your one on “The Programming Model” allows learners to revisit the lecturer’s explanation of a key concept and to repeat it if necessary in order to grasp it fully. This characteristic of podcasting also supports the notion of podcasting as a key element of a blended learning environment. The lecture room may be the ideal place to introduce the concept to all learners, but virtual classrooms and podcasts can be used by learners to reinforce what they have gleaned in the classroom, and to repeat parts of the class that they may not have understood the first time around. The value of having a learning object like a podcast available to learners is an argument in favour of integrating e-learning components into all learning programmes, and not only distance learning programmes.”  Feedback from **Descriptive Statistics**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | N | Minimum | Maximum | Mean | Std. Deviation | | state\_1 | 10 | 2.00 | 5.00 | 3.9000 | 1.19722 | | state\_2 | 10 | 1.00 | 5.00 | 2.7000 | 1.56702 | | state\_3 | 10 | 3.00 | 5.00 | 4.1000 | .87560 | | state\_4 | 10 | 3.00 | 5.00 | 4.0000 | .81650 | | state\_5 | 10 | 3.00 | 5.00 | 4.1000 | .73786 | | state\_6 | 10 | 2.00 | 5.00 | 3.6000 | 1.26491 | | state\_7 | 10 | 1.00 | 2.00 | 1.3000 | .48305 | | state\_8 | 10 | 3.00 | 5.00 | 4.5000 | .70711 | | state\_9 | 10 | 2.00 | 4.00 | 3.2000 | .63246 | | state\_10 | 10 | 1.00 | 2.00 | 1.3000 | .48305 | |  | 10 |  |  |  |  |   Note that statements 3 & 4 i.e.: “I am glad that I have been exposed to my lecturer’s podcast” and “Usually listening to a podcast enhances my understanding of lecture material” had an average of 4.1 and 4.0 respectively.  Furthermore, the following feedback was obtained from the analyzed data using the SPSS software  60 % of the respondents indicated that podcasting does not scare/imitate them at all; counter interpretation is that 40 % of the respondents are confident in the use of podcasting.  90% of the respondents indicated a neutral response to the statement : “sometimes podcasting makes me feel uncomfortable”  60% of the respondents indicated a neutral response to the statement “that they were glad to have been exposed to my lecturer’s podcasts.  70% of the respondents indicated that usually listening to a podcast enhanced my understanding of lecture material  An overwhelming majority (70%) strongly agreed with statement number 5: “more access to podcasting technology”  70 % of the respondents were in agreement with statement 6  70% disagreed “with the statement that podcasting is a waste of time”.  30% were neutral response.  60% agreed with the statement “sometimes podcasting using “blended” learning is a more effective learning activity.  Statement 10  60% chose a neutral response to vodcasts  30% agreed and  10 % disagreed |  |
| 9 | **REFLECTION** |  |
| 9.1 | **Assumptions**  Which assumptions did you make about yourself and your learners? What did you learn from your assumptions after implementing the activity?  I assumed that I (having extensive experience in IT) had the “know-how to design/upload/ and deploy a podcast”, with the minimum of effort and as quickly as possible.  I assumed all my students and colleagues would be as enthusiastic and motivated as I am about trying out a relatively new approach to learning.  I assumed that students had the necessary infrastructure to download and listen to podcasts. |  |
| 9.2 | **Future adjustments**  In the light of the feedback received and the lessons you have learnt, how will you adapt your activity and/or your classroom during the next action research cycle?  Podcasts will be uploaded to the IT server, students will download the podcasts to their cell phones/mp3 players  Due to the data received that 60% of the respondents indicated a blended approach to learning: Podcasting must been seen as complementing the traditional lecture based mode of instruction.  70% disagreed with data that stated that podcasting must be limited to distance/correspondence learning; My initial view was that I should use podcasts primarily for my “part time students”; now I feel that I should, if given the opportunity, use podcasts for my “full time” students.  Vodcasts receive a low response; this may be due to the fact that greater emphasis was placed on podcasts rather than vodcasts; Maybe in the next research cycle greater emphasis to be placed on vodcasts rather than podcasts.  An overwhelming response indicated (70%) indicated greater access to podcast technology”. The issue of hardware infrastructure must be addressed for the success of implementing podcasting.  70% of the respondents indicated that podcasts enhanced their leaning. This fact must be communicated to educators and implemented in their teaching strategy. |  |
| 9.3 | **Impact**  What impact do you envisage this intervention could make, or has made on either or all of the following: you, your learners, the curriculum and the institution?  DUT would join the local university i.e. UKZN as an institution of higher learning that implements podcasting and we would gain international exposure in the exciting field of podcasting.  I have learnt a new and exciting technology to enhance my teaching.  Learners were exposed to a radical and innovative approach at DUT by listening to learning from their lecturer’s podcast. |  |
| 9.4 | **Lessons learnt**  What lessons have you learnt in the various phases during your year as a DUT Podcaster?  Bandwidth and upload speeds are an important factor to consider when designing podcast. Students do not want to download large files, and students tend to get bored if they have to wait for files to download or if files are “buffered” during playback. |  |
| 10 | **BIBLIOGRAPHY** |  |
|  | 2010. Available:http://www.ukzn.ac.za/ukznonline/v3/02/alumniissue2.html [Accessed 23 October 2010].  2010. Available: http://en.wikipedia.org/wiki/computer\_science [Accessed 20 October] 2010.  A, D. 2007 A Teaching with Technology White Paper Podcasting.  ALEXANDER, B. 2004. “Going Nomadic: Mobile Learning in Higher Education,” EDUCAUSE Review. 39, 30.  BLYTHE, A. 2006. Students download complete lectures. The News and Observer  M, D. 2000. Psychology of Learning for Instruction.  MOORE, E. & OBLINGER, D. O., J 2005. When iPod goes collegiate. The Christian Science Monitor Is it age or IT: first steps toward understanding the Net Generation. In Educating the Net Generation.  STUART, P. G. 2010. RE: Podcasting.  WINTER, S. P. 2007. IPod in Education: The Potential for Teaching and Learning. |  |
| 11 | **WOW! Factor** |  |
|  | Up to six marks will be awarded for the wow factor. |  |
|  | **TOTAL** |  |

 Good luck :)